



Plant Sciences UPDATE

August 2006

LEAD STORIES 2

- Classroom Activities in Plant Biotechnology 2
- Scientists Create a Defense Plan Against Citrus Greening Threat 2

FUNDING IMPACTS AND OPPORTUNITIES 3

INVESTMENTS 3

- FY 2006 NC and NE IPM Competitive Grants Awarded 3

IMPACTS 4

- Research Advances Knowledge of Fusarium Head Blight 4
- Ants Take the Bait for Less Toxic Solution 4
- International Opportunity for Young Investigators 5
- Tomato Psyllids Cropping Up in Southern California 5
- International Conference on Genomics of Solanaceae Specialty Crops 6
- CSREES Funds Research Examining the Genetics Behind the Formation of Maize 6
- Warm Winter, Wet Spring Leads to Abundance of Ticks 7

OPPORTUNITIES 7

- Applying For Grants At Grants.gov 7

CSREES PROGRAM HIGHLIGHTS 7

- USDA's Organic Working Group: An Invitation to Join 7
- CSREES NRI Agricultural Biosecurity Program 8
- CSREES Sponsor Biological Invasions Researcher Database 8
- 2006 Progress Report of the National Plant Genome Initiative 9

UPCOMING AND RECENT MEETINGS 9

- Convergence of Genomics and the Land Grant Mission 9
- Upcoming Workshop for USDA-ARS Organic Research Plans 9
- Proposed Implementation Plans for 2007 Hatch and McIntire-Stennis Programs 10
- Senate Appropriations Committee Mark Ups FY07 11
- New USDA Strategic Plan 11

PERSONNEL SPOTLIGHT 11

- Nowierski Represents CSREES on APHIS PPQ Permitting Board of Advisors 11
- CO State University Publication Analyzes Emerging Issues in Organics for USDA 11
- Marty Draper Joins CSREES as NPL in Plant Pathology 12

RESOURCES 12

- U.S. Army Entomology – Mapping Pest Populations 12
- National Pesticide Information Retrieval System (NPIRS) 12
- Free Weed Management Tools 12
- Floriculture and Nursery Crops Yearbook 13
- PLANTS Database 13
- 2006/07 SARE Highlights 13
- CSREES Communications Email List 13
- New IPM Resources in Oregon 13
- Manage Insects on Your Farm 13
- National Invasive Species Information Center 14
- Pre-Harvest Security Guidelines and Checklist 2006 14
- Office of Cotton Technology Transfer Website 14
- New "Smart Water Use on Your Farm or Ranch" Bulletin 14
- Florida/IFAS Pesticide Information Office Website 14
- Identifying Natural Enemies in Field Crops 14

PLANT SCIENCES STAFF DIRECTORY 15

CSREES WEB LINKS 16



Agriculture is a knowledge-based, global enterprise, sustained by the innovation of scientists and educators.

The mission of CSREES is to advance knowledge for agriculture, the environment, human health and well-being, and communities.

www.csrees.usda.gov

PLANT SCIENCES UPDATE WEB LINK: www.csrees.usda.gov/newsroom/newsletters/plantsciencesupdate/psupdate.html

For more information on the Plant Sciences Update contact Amy Rhodes at arhodes@csrees.usda.gov

LEAD STORIES

Classroom Activities in Plant Biotechnology

Research educators at Colorado State University and Ohio State University, funded by the CSREES NRI Plant Genome Program, have developed an outreach program that uses “Classroom Activities in Plant Biotechnology” to introduce children to the importance of food crops in their lives and the problems that will occur in food production if we are not able to overcome pathogens and climate changes. In 2005, presentations were given to about 520 children in elementary and middle schools in Colorado and now with integrated funds it enables expansion of the program to reach schools in areas with high Latino and/or American Indian populations. One of the project goals is to increase future levels of participation by underrepresented students in plant biology, plant pathology and biotechnology. Travel funds are used to go to individual schools and train teachers, as well as to present some materials using “activity kits” directly to the students – thus increasing their exposure to university scientists and research opportunities. K-12 teachers and students learn and use the laboratory techniques utilized in crop improvement, such as DNA extraction, gel electrophoresis, PCR, and microarray technology. Two educational units introduce 1) the effects of plant disease on human and plant health and 2) the effects of global warming, to facilitate learning about how important agricultural science is in the solution to these issues. For more information visit <http://lamar.colostate.edu/~jsteph>.

Scientists Create a Defense Plan Against Citrus Greening Threat

Citrus greening is one of the most devastating diseases of citrus in the world, stunting trees and causing small, bitter fruit. With the recent discovery of citrus greening in Florida, an educational effort by a team of scientists to stop the Asian citrus psyllid from becoming established in California is especially timely.

The psyllid is an efficient carrier of the bacterium that causes the disease called citrus greening or “Huanglongbing” because the fruit develops a bitter taste and does not color properly, leading to the name greening.

Entomologist Beth Grafton-Cardwell from University of California (UC) Riverside organized a team of researchers from the University of Florida and California Department of Food and Agriculture to develop a color brochure, web

site (http://citrusent.uckac.edu/asian_citrus_psyllid_main.htm), and slide presentation to educate California citrus growers, the ornamental nursery industry, and regulatory agency staff about Asian citrus psyllid and greening disease. The UC Exotic/Invasive Pests and Diseases Research Program funded this project. The program targets research on exotic pests and diseases in California and is funded by CSREES. For more information and full article visit www.ipm.ucdavis.edu/NEWS/asiancitrus-news.html.



FUNDING IMPACTS AND OPPORTUNITIES

INVESTMENTS

FY 2006 NC and NE IPM Competitive Grants Awarded

The Regional Integrated Pest Management (IPM) Competitive Grants Program supports projects that develop individual pest control tactics, integrate individual tactics into an IPM system, and develop and implement extension education programs. The program is administered by the land-grant university system's four regions (North Central, Southern, Northeastern, Western) in partnership with CSREES.

North Central Awarded \$755,666 www.ncpmc.org

More info and abstracts: www.csrees.usda.gov/fo/integratedpestmgtnorthcentral.html

- Kansas State University, \$77,028, "Can Increased Predator Foraging Efficiency Contribute to More Effective and Cost-Competitive Biological Control Programs in Greenhouses?"
- University of Illinois, \$90,014, "Movement of Rotation-resistant Western Corn Rootworm Beetles from Soybean Fields to Corn Fields."
- University of Nebraska, \$89,622, "Predicting Wheat Curl Mite Movement and Wheat Streak Mosaic Virus Spread."
- Purdue University, \$90,100, "A Bioherbicide for Common Waterhemp and Pigweeds."
- University of Illinois, \$90,098, "Understanding the Weedy Chenopodium Complex as a First Step Toward its IPM."
- Kansas State University, \$56,619, "Integrated Management of Weeds and Stalkboring Insects in Sunflower."
- University of Minnesota, \$41,391, "Meteorological-based Forecasts and Targeted Insecticide Application to Improve Control of Green Peach Aphid."
- University of Wisconsin, \$80,695, "Decision Making Tools to Accelerate Adoption of Variant Western Corn Rootworm IPM."
- University of Illinois, \$42,061, "North Central Region Suction Trap Network."
- Michigan State University, \$30,150, "Educating Growers about Glyphosate Stewardship."
- University of Illinois, \$35,888, "Transition from NC IPM Facilitator to NC IPM Center Director."
- University of Illinois, \$32,000, "NC IPM Program."

Northeast Awarded \$599,327– more info can be found at www.NortheastIPM.org

More info and abstracts: www.csrees.usda.gov/fo/integratedpestmgtnortheast.html

- Cornell University, \$16,194, "Potato Varietal Mixtures for Potato Leafhopper Management on Organic Farms."
- University of Connecticut, \$62,412 "Implementation of the IPM and Environmental Education Curriculum."
- Cornell University, \$79,470, "Reducing Potato Leafhopper (Plh) Impacts on Alfalfa through Plh-Resistant Cultivars Intercropped with Perennial Forage Grass."
- Pennsylvania State University, \$175,000, "Design and Delivery of IPM Outreach Programs to Low-Income Urban Neighborhoods."
- University of Maine, \$150,055, "Integrated Pest Management of Pest Ants in the Urban/Suburban Landscape."
- Rutgers University, \$50,000, "Identification of Host-plant Attractants for Cranberry Weevil and Cranberry Fruitworm."
- NY Agricultural Experiment Station, \$46,196, "A Grower Decision Tool for Optimized Disease Management in Snap and Dry Beans: Development and Implementation."
- Pennsylvania State University, \$20,000, "Administration of the Northeastern Region IPM Competitive Grants Program."

IMPACTS

Research Advances Knowledge of Fusarium Head Blight

Fusarium head blight is a devastating disease in many U.S. wheat-growing regions because it reduces grain yield and end-use quality and produces a mycotoxin that can be present at harmful levels in affected grain. With funding from the NRI plant genome competitive grants program, researchers at the University of Minnesota and Kansas State University in collaboration with North Dakota State University aimed to identify the sequence and function of a gene that confers partial resistance to this disease. Using a map-based cloning approach they have genetically mapped the gene into a small interval in the genome. By comparing the order of genes in that region among wheat, rice and barley they have discovered the presence of changes in the DNA sequence. This suggests a complex order of genes among these species in this region of the genome. Knowledge of a gene that contributes to high levels of resistance helps breeders develop effective and efficient means to combat this disease in wheat. The researchers published their findings in the 2006 issue of the journal Functional and Integrative Genomics.

Ants Take the Bait for Less Toxic Solution

Organic citrus growers can use low-toxic ant control measures to rid their groves of pesky Argentine ants, according to a study funded by the University of California Exotic/Invasive Pests and Diseases Research Program (UC EDRP). After one week of using baits, ants were reduced by about 50 percent and after two weeks, by about 70 percent.

In their study, Les Greenberg, entomology specialist, John Klotz, University of California Cooperative Extension urban entomologist, and Michael Rust, entomologist, all from UC Riverside, demonstrated a reduction in Argentine ants in an organic citrus grove using ant bait stations containing liquid toxicants. The ants feed on honeydew excreted by soft scales, mealybugs, cottony cushion scales, whiteflies, and aphids. As part of this relationship, they also protect these insects from their natural enemies, thus interrupting biological control of the honeydew-producing pests.

No effective natural enemies of the Argentine ant are known. Cultural controls, including the use of sticky materials applied to tree trunks, are acceptable for use in organically managed citrus groves. Greenberg, Klotz and Rust recommend that growers monitor their orchards in spring when honeydew-producing insects, such as aphids, appear. Check the abdomen of ants descending the tree trunks to see if they are swollen and translucent. This identifies them as honeydew-collecting species. Growers should periodically inspect for ants and bark damage under the trunk wraps of several young trees. For the most effective and economical ant control, begin treatments when ants become active in the spring following the winter rains.

The UC EDRP targets research on exotic pests and diseases in California. The program aims not only to improve our knowledge and management of pests that are already here, but also to reduce the potential impact of those pests and diseases that pose a threat to the state. The program is collaboration between the UC Statewide Integrated Pest Management Program and the UC Riverside Center for Invasive Species Research. Funding for the program is provided by CSREES. For more information and full article visit www.ipm.ucdavis.edu/NEWS/argentineants-news.html.



International Opportunity for Young Investigators

To facilitate new collaborative international research to advance knowledge of the finished rice genome sequence for crop improvement, funding from the CSREES NRI Plant Genome Program has been granted to enable students and postdoctoral fellows from the USA to participate in the 4th International Symposium on Rice Functional Genomics, to be held in Montpellier, France October 9-11, 2006. Symposium speakers will include leading scientists from the international rice research community to discuss recent advances in rice genomics, genetics, breeding and biology. The range of expertise provides a stimulating venue for early career scientists to discuss their research and foster future collaborations. Symposium information can be found at www.irfgm2006.org.

Tomato Psyllids Cropping Up in Southern California

Tomato psyllids are spreading across the country, devastating crops in Colorado, Montana, Washington, and Ontario, Canada. In Baja, Mexico, growers lost more than 85 percent of their fresh market tomatoes in 2001. California populations originated from Mexico, but are now surviving year-round in San Diego, Orange and Ventura counties.

Entomologists John Trumble, and Richard Stouthamer from the University of California, Riverside, studied the annual pattern of immigration of tomato psyllids into California tomato production areas using visual surveys and molecular techniques. Their results indicate how many psyllids it takes to cause crop damage and can help to estimate when and how much insecticide to use to control them.

Researchers found that for some tomato varieties, psyllids laid eggs on plants previously infested by nymphs far more than on uninfested control plants.

This suggests that for some cultivars there is a physiological change in plant attractiveness following psyllid feeding.

Tomato psyllid density showed a strong correlation to the number of yellowing leaves and leaflets and distorted leaves. This discovery allows scientists to do simple visual surveys of yellowing leaves to estimate psyllid populations. Initial data suggests that about 18 nymphs per plant feeding for 7 to 10 days will cause psyllid yellows on tomatoes exposed during the first three weeks after transplanting.



The lack of information on reliable monitoring techniques makes early detection of these insects very difficult, leading growers in many areas to apply pesticide treatments. “Relatively few reports are available on control using chemicals other than organophosphates or pyrethroids,” says Trumble. “We know that use of these materials in California causes a loss of biological control agents, resulting in outbreaks of secondary pests such as leafminers and spider mites. Imidacloprid is often injected through driplines in California, a practice that fits our IPM program because it doesn’t affect beneficial insects, yet provides additional control in the field.” Trumble and his team are working to find new strategies for controlling the pest.

The UC Exotic/Invasive Pests and Diseases Research Program funded this three-year project. The program targets research on exotic pests and diseases in California and is funded by CSREES. For more information and full article visit www.ipm.ucdavis.edu/NEWS/tomatopsyllids-news.html.

International Conference on Genomics of Solanaceae Specialty Crops

CSREES NRI funded an International Conference on Genomics of Solanaceae Specialty Crops which included tomato, pepper and potato. NRI Plant Genome competitive grant program also provided funds for University faculty, postdoctorates and students to participate in the conference which was held in Madison, Wisconsin, on July 23-27, 2006. The meeting was especially significant because of the funded U.S. genomics projects represented, most notably the NST Tomato Genome sequencing project and Potato genome project, and included a CSREES coordinated agricultural project planning workshop on translational genomics of tomato, potato and pepper for crop science. For more information visit www.hort.wisc.edu/PAA-Solanaceae.

CSREES Funds Research Examining the Genetics Behind the Formation of Maize

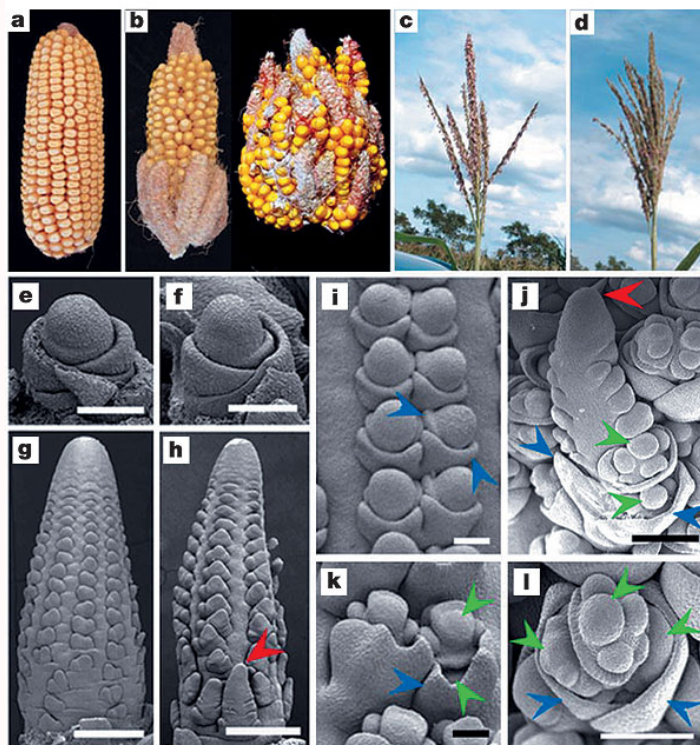
Researchers at Cold Springs Harbor Laboratory in New York are navigating their way through the genetic map of maize to determine the exact genes responsible for how an ear of corn forms. The impact of this research will not only affect your dinner plate, but also your pocket book. CSREES funded this research through its National Research Initiative Developmental Processes of Agricultural Plants Program. The results of this research are presented in an article entitled, 'A trehalose metabolic enzyme controls inflorescence architecture in maize' featured in the May 11th edition of the journal Nature which can be viewed by visiting www.nature.com/nature/journal/v441/n7090/full/nature04725.html.

Namiko Satoh and colleagues identified specific genes that regulate the crop potential of maize. An ear of corn, or inflorescence, produces seeds and is therefore extremely important in determining crop yield. The number of seeds produced by a maize plant is based on the architecture of the inflorescence. Historically, plant breeders selected plants that produced long inflorescences structures, which contained a greater number of seeds. Therefore, plant yield increased, but until recently the genetic basis of inflorescence development has been obscure.

Satoh, working with colleagues from Dupont, identified the molecular sequence of RAMOSA3 (RA3), a gene critical in the regulation of maize inflorescence architecture. Sequencing of the RA3 gene showed that it contains an enzyme, trehalose phosphate phosphatase. This enzyme is involved in the production of trehalose, a compound of two simple sugars that is found throughout the plant kingdom. The work suggests this simple sugar may act as a developmental signal to regulate the inflorescence architecture critical for crop yields.

Satoh and colleagues from the University of Missouri, St Louis, and the California State University, Long Beach found that RA3 is conserved in other cereal crops, specifically rice varieties, suggesting it may play a role in controlling inflorescence development of other plants as well. Understanding the role of RA3 and other genes that regulate inflorescence development in grain crops may ultimately aid in breeding higher yielding crop plants.

The implications of this research on corn production are numerous. Corn plays an integral part of daily life. It is a staple in food products for humans and animals and for producing resins for biodegradable plastics. Corn is also the primary feedstock for the production of ethanol. And as Americans' wallets are being squeezed at the gas pump, corn-based ethanol may provide the desperately needed gasoline alternative to reduce dependence on fossil fuels.



Warm Winter, Wet Spring Leads to Abundance of Ticks

Tick abundance in Rhode Island is slightly ahead of last year's record numbers, according to early results from the University of Rhode Island's statewide tick survey, and the weather seems to be to blame.

URI tick researcher Thomas Mather said that the warm winter allowed ticks to get an early start on the season, and the moist conditions through the spring and early summer are keeping tick activity high. To view a map depicting the distribution of deer tick abundance in Rhode Island, visit www.tickencounter.org and click on Lyme disease maps.

Through a CSREES Special Research Grant, Mather and his team are launching a new research project that he believes will find a direct link between tick activity and relative humidity. If the results prove true, he expects it to be possible to provide accurate weekly tick activity forecasts through the summer months thereby providing people with an index of their risk of being bitten by ticks. For more information and full article visit www.uri.edu/news/releases/?id=3625.

OPPORTUNITIES

Applying For Grants At Grants.gov

Grants.gov is the site to find and apply for competitive Federal grants across Federal Grant making agencies. There are active grant opportunities posted on the site spanning diverse grant categories ranging from Agriculture to Technology. Through Grants.gov, the grant community has online access to grant application packages and then view and complete it offline giving you the flexibility to complete grant applications when and where you want. When the application is complete and ready for submission, you can connect to the Internet and simply click the submit button.

Grants.gov resources on the web

- Grants.gov checklists for Organizations, Individuals, Institutions, etc. – www.grants.gov/RegistrationChecklist
- Other useful links, including foundation resources, funding resources, grants management resources, and more: www.grants.gov/RelatedLinks
- CSREES information can be found at: www.csrees.usda.gov/business/other_links/egov/csrees/egrants.html.

CSREES PROGRAM HIGHLIGHTS

USDA's Organic Working Group: An Invitation to Join

There are an increasing number of USDA agencies, programs and personnel integrating organic issues into their work plans. Our goal with this group is to coordinate USDA efforts through networking, information sharing and joint strategic planning. This group will be one venue for USDA staff interested in organics to get feedback, be introduced to existing programs or touch base with those who work most closely with organic policies, programs, research and other issues.

We hope to meet 3-6 times a year, depending on the level of interest, and welcome membership from any USDA agency, or other government partners interested in working with USDA personnel on organic agriculture, food, and resource issues. There is also an Organic Working group Listserv that you can join if you are interested in staying on top of organic news and current events (but unable to join the working group). If you would like to join the Organic Working Group Listserv contact Mary Gold at mgold@nal.usda.gov. For more information or if you have questions about Organic Working Group meetings, contact Dawn Thilmany, Interim National Program Leader for Organics, CSREES, dthilmany@csrees.usda.gov, (202) 401-4879.

CSREES NRI Agricultural Biosecurity Program

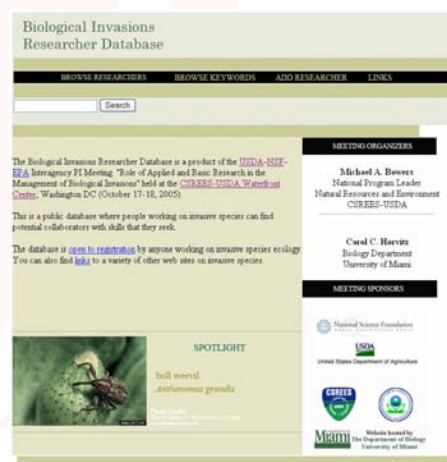
The Agricultural Biosecurity program cluster primarily addresses CSREES' strategic goal to enhance protection and safety of the Nation's agriculture and food supply. It also supports CSREES' strategic goals of enhancing economic opportunities for agricultural producers and protecting and enhancing the Nation's natural resource base and environment.

The Plant Biosecurity program is part of the Agricultural Biosecurity program cluster that provides a foundation to tackle new and reemerging pathogens or pests of major economic significance in the U.S. and that threaten both industry viability and consumer access to safe and affordable food. These programs also contribute to an effective security program for animals and plants that will allow the Nation to respond effectively to the intentional or accidental entry of a foreign pathogen, pest or other biological threat to the U.S. The study of zoonotic pathogens in some of these programs may also benefit public health. Additionally, knowledge from this area also helps producers improve production efficiency, lower production costs, and aids the discovery of alternatives to pesticides and antibiotics to control disease outbreaks. Activities emphasize basic and applied research approaches, as well as integrated research, education, and extension solutions for identified priorities. Outcomes will contribute to new and improved pathogen and pest control strategies and tools such as: diagnostics, biosignatures, treatments, vaccines, preventatives, immune enhancers, alternatives to antibiotics and harmful pesticides, increased resistance to animal and plant diseases, enhanced animal protection, disease forecasting including pathogen or pest emergence, risk assessment, surveillance and communication programs.

This Plant Biosecurity program supports integrated projects aimed at ensuring a continued supply of safe, high-quality, affordable food and fiber for consumers in the U.S. and international trade partners. The goal of the program is to harness our Nation's scientific and technological resources to help agricultural producers and professionals implement strategies to safeguard agriculture in the U.S. from high-consequence plant diseases. To accomplish this, the program focuses on integrated research, education and extension projects that counter threats to the agriculture system in the U.S., both by stepwise improvements to current responses and by development of innovative new capabilities. To meet these identified needs of agriculture, the long-term (10 year) goals for this program are: provide the understanding and technologies needed to anticipate, deter, protect against, detect, mitigate, and recover from threats to the Nation's agricultural plant security; provide decision makers and responders with knowledge and decision support tools needed to anticipate, prevent, prepare for and respond to agricultural threats of high-consequence plant pathogens; and enable strategies for control and elimination of high-risk plant pathogens.

The CSREES NRI Plant Biosecurity Program Team consists of: Liang-Shiou Lin, llin@csrees.usda.gov; John L. Sherwood, sherwood@csrees.usda.gov; Duane Alps, dalps@csrees.usda.gov; Kitty Cardwell, kcardwell@csrees.usda.gov; and Ed Kaleikau, ekaleikau@csrees.usda.gov.

CSREES Sponsor Biological Invasions Researcher Database



One product of a CSREES-National Science Foundation (NSF)-EPA interagency Principal Investigator meeting held in October 2005, is a recently constructed Biological Invasions Researcher Database. The workshop, entitled the "Role of Applied and Basic Research in the Management of Biological Invasions," identified the need to match skill sets of researchers in addressing invasive species management issues. When fully populated, this will create a public database where people working on invasive species can find potential collaborators with skills that they need. The database is open to registration by anyone working on invasive species. The website can be accessed at www.bio.miami.edu/nsfinvdb/.

2006 Progress Report of the National Plant Genome Initiative

Published, the 2006 Progress Report of the National Plant Genome Initiative, by the Interagency Working Group on Plant Genomes, Committee on Science, National Science and Technology Council. The annual report of the National Plant Genome Initiative (NPGI) highlights the progress made in 2005 by the U.S. plant genomics research community. The report was prepared by the National Science and Technology Council's Interagency Working Group (IWG) on Plant Genomes (CSREES & ARS, NSF, DOE, NIH, USAID, NASA, and OSTP), which coordinates and provides oversight for the Federal Investment in plant genome research through the NPGI. The IWG provides oversight for the NPGI to garner interagency support and cooperation for plant genome sciences and ensure progress toward meeting the goals set forth in the long-term plan. Under the IWG's stewardship, the U.S. has become and continues to be the world leader in plant genomics research and its application to agriculture, health, energy and the environment. Highlights include the initiation of the maize genome sequencing project and genomics for biofuels, rice SNPs and the International Rice Functional Genomics Consortium, genome enabled modification of poplar root development for increased carbon sequestration, CSREES rice and wheat Coordinated Agricultural Projects (CAP) for translational genomics, phytoremediation of ionic and methylmercury pollution, marker assisted selection workshops for plant breeders, microarray workshop for faculty at historically black colleges and universities, new integrative graduate education and research traineeship program, and developing country collaborations in plant genome research. For more information contact CSREES National Program Leader Ed Kaleikau, ekaleikau@csrees.usda.gov.

UPCOMING AND RECENT MEETINGS

Convergence of Genomics and the Land Grant Mission

Purdue University will host a national conference on agricultural genomics entitled "Convergence of Genomics and the Land Grant Mission: Emerging Trends in the Application of Genomics in Agricultural Research" on September 10-12, 2007 in West Lafayette, Indiana. The conference will feature invited presentations by recognized leaders in agricultural genomics and submitted posters from interested participants. Presentations on microbes, arthropods, plants, animals and ecological systems will be integrated into sessions addressing the following themes: Transition from Model to Agricultural Species, Integrating Information Across Databases, Translational Challenges and Successes, and Roundtable Discussion and Recommendations.

This meeting promises to be a rare opportunity to exchange scientific expertise and experiences among genomics researchers and stimulate new discussions with applied researchers, stakeholders, and decision makers who do not normally interact with the genomics community. The goal of the conference is to promote synergisms across disciplines, commodities, and species. For more information about the program, the organizing committee and other meeting logistics, visit the conference website at www.entm.purdue.edu/conference.

Upcoming Workshop for USDA-ARS Organic Research Plans

The USDA Agricultural Research Service (ARS) will hold a planning meeting for the Integrated Agricultural Systems National Program (NP207) during the week of October 23rd in Atlanta, Georgia. The "customer input" portion of the meeting will be Oct. 24th & 25th, 2006. The NP207 Integrated Systems program is emerging as the primary coordinator for ARS's growing organic research portfolio. Using input from producers, scientists and others, this workshop will generate the program's research plans and outcomes for the next five years. For more details, contact Jeffrey Steiner, Natural Resources and Sustainable Agricultural Systems National Program Leader, at Jeffrey.Steiner@ARS.USDA.GOV; or Nadine Kessler, phone (301)504-4636 or Nadine.Kessler@ARS.USDA.GOV.

2006

- American Phytopathological Society/Canadian Phytopathological Society/Mycological Society of America Joint Meeting, Quebec City, Canada, July 29-Aug 2, 2006. meeting.apsnet.org
- American Society of Plant Biologists, Plant Biology 2006 Conference, Boston, MA, August 5-9, 2006. www.aspb.org/meetings/pb-2006/pb06flyer.pdf
- International Conference on The Future of Agriculture: Science, Stewardship, and Sustainability, Sacramento, CA, August 7-9, 2006. www.dce.ksu.edu/dce/conf/ag&environment/
- 27th International Horticultural Congress. Seoul, South Korea, August 13-19, 2006. www.ihc2006.org
- North Central SARE's National Conference on Sustainable Agriculture, Oconomowoc, WI, August 15-17, 2006. www.sare.org/ncrsare/2006_national_conference.htm
- Natural Products Expo East, Baltimore, MD, October 4-7, 2006. www.expoeast.com/
- 2006 ASLA Annual Meeting & EXPO, Minneapolis, MN, October 7-10, 2006. www.asla.org/meetings/am2006/minneapolis.html
- 4th International Symposium on Rice Functional Genomics, Montpellier, France, October 9-11, 2006. www.irfgm2006.org
- ASA-CSSA-SSSA International Annual Meeting, Indianapolis, IN, November 12-16, 2006. www.asa-cssa-sssa.org/meetings/acs/future.html
- 4th International Bemisia Workshop -and- International Whitefly Genomics Workshop, Duck Key, Florida, December 3-8, 2006. <http://conference.ifas.ufl.edu/bemisia>
- ESA Annual Meeting, Indianapolis, IN, December 10-14, 2006. www.entsoc.org

2007

- International Master Gardener Conference, Little Rock, AR, May 2-5, 2007 mg2007.uaex.edu/
- 2007 ASHS Annual Conference, Scottsdale, AZ, July 16-19, 2007. www.ashs.org/conferences.html
- International Society for Arboriculture, Honolulu, HI, July 28 - August 1, 2007. www.ashs.org/conferences.html
- 2007 ASLA Annual Meeting & EXPO, San Francisco, CA, October 6 - 9, 2007. www.asla.org/nonmembers/meetings.html
- ASA-CSSA-SSSA International Annual Meeting, New Orleans, LA, November 4-8, 2007. www.asa-cssa-sssa.org/meetings/acs/future.html

INSIDE THE BELTWAY

Proposed Implementation Plans for 2007 Hatch and McIntire-Stennis Programs

The President's FY 2007 CSREES Budget calls for an alternative approach for resource distribution of the Hatch and the McIntire-Stennis formula-based research programs. Under this new approach, on October 1, 2006, a portion of the formula based funding for both programs would be awarded through a nationally competitive multi-state/multi-institutional process. CSREES is responsible for developing implementation plans for the new competitive portion of these programs. This new approach requires a draft Request for Applications (dRFA) and processes for continuing the formula-base portion of these funding lines at the proposed funding level. Working with multiple parties, CSREES has developed a framework for both the Hatch National Multi-State Competitive Allocation Program and the McIntire-Stennis National Competitive Multi-State Forestry Research and Graduate Education Allocation Program. Leaders from both CSREES and eligible institutions are working together to develop a feasible implementation program for the proposed budget. CSREES senior staff and institutional representatives formed a working group to develop a restructuring plan for each program. Stakeholder participation in the program is essential for process credibility. However, their participation should not be interpreted as an endorsement of the proposed Hatch or McIntire-Stennis program changes. For entire article visit www.csrees.usda.gov/newsroom/news/csrees_news/06news/hatch_mcintire.html.

Senate Appropriations Committee Mark Ups FY07

On June 22, 2006, the Senate Appropriations Committee marked up the FY 2007 agriculture appropriation for USDA, including CSREES. The Senate Appropriations Committee proposes \$1,224,815,000 for CSREES in FY 2007. This is an increase of \$186,758,000 over the FY 2007 President's Budget proposal of \$1,038,057,000 and is an increase of \$25,494,000 over the FY 2006 appropriation with rescission of \$1,199,321,000. It is also an increase of \$35,878,000 over the \$1,188,937,000 proposed for CSREES in the FY 2007 Agriculture Appropriation Bill passed by the House. For more information visit www.csrees.usda.gov/about/offices/budget.html.

New USDA Strategic Plan

USDA has received OMB approval for its new 2005-2010 Strategic Plan, which can be found at www.usda.gov/ocfo/usdasp/usdasp.htm. The new plan has six Strategic Goals:

1. Enhance International Competitiveness of American Agriculture
2. Enhance the Competitiveness and Sustainability of Rural Farm Economics
3. Support Increased Economic Opportunities and Improved Quality of Life in Rural America
4. Enhance Protection and Safety of the Nation's Agriculture and Food Supply
5. Improve the Nation's Health and Nutrition
6. Protect and Enhance the Nation's Natural Resource Base and Environment

The new USDA plan does not affect our current portfolios at this time and CSREES will seek to minimize any disruption.

PERSONNEL SPOTLIGHT

Nowierski Represents CSREES on APHIS PPQ Permitting Board of Advisors

In early FY 2006, APHIS, Plant Protection and Quarantine (PPQ) concluded a review of the Agency's organism permitting function. The review was designed to identify and implement improvements to this crucial PPQ activity, including reestablishing its permitted organism 'hand-carry' policy, establishing a Permitting Customer Service Center and re-engaging in organism permitting regulatory reforms. Additionally, the review's 'Keystone' recommendation was the institution of a Permitting Board of Advisors (BOA) composed of Federal and State stakeholders to counsel and support the Agency in continued improvements to its permitting policies and procedures.

Nine entities have been proposed for initial BOA membership, including the American Phytopathological Society, the Department of Homeland Security/Customs and Border Inspection, the Entomological Society of America, the Invasive Species Advisory Committee, the National Plant Board (2 regional members), both PPQ Eastern and Western Regions, USDA's Agricultural Research Service, and CSREES. National Program Leader Robert Nowierski will represent CSREES on the Permitting BOA. Nowierski provides national leadership for overall planning, development, organization, and management of research and extension programs concerning applied ecology, biological control, and invasive species. He may be reached at rnowierski@csrees.usda.gov.

Colorado State University Publication Analyzes Emerging Issues in Organics for USDA

Dawn Thilmany, Associate Professor in Colorado State University's Department of Agricultural & Resource Economics, is also serving as CSREES's Interim National Program Leader for Organics. The April 2006 Agribusiness Marketing Report, a CSU Extension publication, features her article, The US Organic Industry: Important Trends and Emerging Issues for the USDA, which describes historical trends in organic agriculture, analyzes emerging issues, discusses international models for supporting organic agriculture, and presents research, extension, and education needs in organic agriculture. This article can be read by visiting <http://dare.agsci.colostate.edu/csusagecon/extension/docs/agbusmarketing/abmr06-01.pdf>

Marty Draper Joins CSREES as NPL in Plant Pathology

Martin (Marty) Draper has joined CSREES' Plant & Animal Systems Unit as National Program Leader in plant pathology. Marty was most recently Extension Plant Pathologist at South Dakota State University where he focused his applied research and outreach program on wheat and soybean diseases, but had responsibilities for all crops from alfalfa to zucchini, including commercial production and home gardens. He also was contributor to the national effort on soybean rust preparedness. His roles in PAS will include soybean rust and other field crop diseases, regional committees, and Extension components of the NPDN including the First Detector network and outreach via the PIPEE. He is a native of Iowa and received his BS from Iowa State University in Plant Pathology and Pest Management and his MS and PhD degrees in Plant Pathology from North Dakota State University. He can be reached at mdraper@csrees.usda.gov or (202) 401-1990.

RESOURCES

U.S. Army Entomology – Mapping Pest Populations

This website offers helpful information on how to begin a Geographic Information Systems (GIS) mapping program for insect populations. Information on the benefits of mapping pest populations, GIS hardware and software requirements, and other resources are also found on this page. <http://chppm-www.apgea.army.mil/Entomology-GIS/>

National Pesticide Information Retrieval System (NPIRS)

For over twenty years the NPIRS (<http://ppis.ceris.purdue.edu/npublic.htm>) has allow quick retrieval of current information about EPA-registered pesticides for individuals and organizations working on pesticide-related activities. The National Pesticide Information Retrieval System (NPIRS) is a collection of pesticide-related databases available by subscription. NPIRS is under the administration of the Center for Environmental and Regulatory Information Systems, CERIS, at Purdue University in West Lafayette, Indiana. It offers searchable databases, dictionaries, and training opportunities.

Free Weed Management Tools

Nine Midwestern universities developed two free web applications for weed management. The first is the WeedSOFT Yield Loss Calculator. This calculator is designed to estimate the yield loss from emerged weeds in corn or soybeans. This could represent weeds either being controlled in a total post program or weeds that are being controlled in a re-spray or second flush situation.

The calculator works by simply selecting your state, entering a few pieces of information about the crop and weeds, and then clicking the calculate yield loss button. In these postemergence scenarios, the yield loss calculator will estimate the yield loss in bu/a from early season weed competition (yield loss up to that stage of growth), yield loss if weeds are not controlled until the next growth stage, and total yield loss for the season if these weeds were not controlled. In addition to the estimated yield loss in bu/a, the dollar loss per acre is also presented.

The second tool is the WeedSOFT Tank Mix Calculator. This tool has two great features. First, it calculates herbicide and adjuvant quantities that are needed to mix loads based on your spray volume (gpa), tank size, and the herbicide rates you enter. Second, it creates a printable load ticket that can double as a record keeping form. It also has EPA registration numbers for a large number of herbicides, which are automatically loaded when you select your herbicide.

Both tools work rapidly over the internet, even with dial-up service. Both are available by visiting <http://weedsoft.unl.edu/weedsoftapps.htm>. These tools are just two parts of the complete WeedSOFT software program, which provides a more complete analysis of herbicide management options and economic returns in corn and soybeans. If you are interested in learning more about the full software program please visit the WeedSOFT home page at <http://weedsoft.unl.edu>.

Floriculture and Nursery Crops Yearbook

The USDA Economic Research Service released a report on July 5 entitled Floriculture and Nursery Crops Yearbook which includes statistics on floriculture and nursery crop sales, number of growers, imports, exports, and consumption. For floriculture crops, tables include quantity sold, value of sales, wholesale prices, consumption per U.S. household, and import share of consumption. The report is posted at <http://usda.mannlib.cornell.edu/data-sets/specialty/FLO/>.

PLANTS Database

The PLANTS Database <http://plants.usda.gov/> provides standardized information about the vascular plants, mosses, liverworts, hornworts, and lichens of the U.S. and its territories. It includes names, plant symbols, checklists, distributional data, species abstracts, characteristics, images, crop information, automated tools, onward Web links, and references. This information primarily promotes land conservation in the United States and its territories, but academic, educational, and general use is encouraged. PLANTS reduces government spending by minimizing duplication and making information exchange possible across agencies and disciplines. PLANTS is a collaborative effort of the USDA NRCS National Plant Data Center (NPDC), the USDA NRCS Information Technology Center (ITC), and many other partners.

2006/07 SARE Highlights

Farmers and ranchers seeking to learn more about profitable and practical agricultural systems will find a wealth of ideas from 2006/07 SARE Highlights, a free publication now available from the Sustainable Agriculture Research and Education (SARE) program. The 2006/07 Highlights features 12 of the most innovative research projects funded by SARE, which awards grants to promote farming and ranching systems that are profitable, environmentally sound and good for people and communities. Download the entire publication at www.sare.org/publications/highlights.htm. To order free print copies, visit www.sare.org/Webstore, call 301/504-5411 or email san_assoc@sare.org.

CSREES Communications Email List

CSREES has created an electronic mailing list for news releases and announcements. To subscribe, send an e-mail to Jennifer Martin CSREES Media Coordinator indicating your interest. jmartin@csrees.usda.gov, 202-720-8188

New IPM Resources in Oregon

A Western IPM Center grant has supported the development of a new IPM web site for Oregon. The web address for this site is <http://ipmnet.org/>. It features links to state, regional and national IPM resources, and provides access to a number of tools and services that are delivered by the Integrated Plant Protection Center (IPPC), some of which are regional or national in scope. The OSU Extension Service has also published the Integrated Pest Management Resource Guide by Paul Jepson, Linda Brewer, and Susan Jepson (Publication # EM 8898; June 2006, 44 pages). This guide, which highlights the national IPM Roadmap, can be seen at the OSU Extension web site at <http://extension.oregonstate.edu/catalog/pdf/em/em8898.pdf>. The IPM Program at OSU works closely with Mike Fitzner and the national IPM team at CSREES, and with Rick Melnicoe and Linda Herbst at the Western IPM Center, UC Davis.

Manage Insects on Your Farm

Nationwide, farmers are in need of insect pest management strategies that are effective, affordable and environmentally sound. To help meet that need, the Sustainable Agriculture Network (SAN) announces the release of Manage Insects on Your Farm: A Guide to Ecological Strategies, a primer designed to help farmers improve their farms' natural defenses against insect pests. Examples of successful pest management strategies featured throughout the book demonstrate real-life examples of how to address insect problems and develop a more complex and diverse on-farm ecosystem. Readers will learn how to minimize insect damage with wise soil management and identify beneficial insects to put these "good bugs" to work. Download a complete copy of Manage Insects on Your Farm at www.sare.org/publications/insect.htm for free or for more information call 301-374-9696.

National Invasive Species Information Center

The National Invasive Species Information Center (NISIC) was established in 2005 at the National Agricultural Library to meet the information needs of users including the National Invasive Species Council. NISIC creates and manages the www.invasivespeciesinfo.gov Web site. The Web site serves as a reference gateway to information, organizations, and services about invasive species.

Pre-Harvest Security Guidelines and Checklist 2006

Guidelines to help agricultural producers enhance security at the farm level. These practical measures help to protect against natural disasters, as well as the unintentional or intentional introduction of plant or animal diseases. Guidelines and checklist are found at www.usda.gov/documents/PreHarvestSecurity_final.pdf.

Office of Cotton Technology Transfer Website

The Office of Cotton Technology Transfer website highlights ginning technology, list news and events, and cotton ginning publications from the USDA ginning labs. For more information contact Dr. Thomas Valco, at tvalco@ars.usda.gov or by phone at (662) 686-5255. Visit the website at <http://msa.ars.usda.gov/gintech/>

New "Smart Water Use on Your Farm or Ranch" Bulletin

Smart Water Use on Your Farm or Ranch, a new 16-page bulletin from the Sustainable Agriculture Network, spotlights innovative, SARE-funded research into a range of conservation options including soil management, such as using compost, conservation tillage and cover crops; plant management, featuring crop rotation, water-conserving plants and rangeland drought mitigation; and water management strategies such as low-volume irrigation and water recycling. Preview or download the entire publication at www.sare.org/publications/water.htm. To order free print copies, please visit www.sare.org/webstore, call 301-504-5236 or email san_assoc@sare.org.

Florida/IFAS Pesticide Information Office Website

The University of Florida/IFAS Pesticide Information Office's website has undergone an extensive overhaul and is now online at <http://pested.ifas.ufl.edu/>. The University of Florida's Pesticide Information and Education Program provides information, educational programs, and materials to: persons who use pesticides as a part of their livelihood, consumers with questions about use and impact of pesticides in their daily lives, faculty and students, and decision makers, such as local, state, and federal government regulators and legislators. Special new features offered are the online presentations through the software, Articulate and the "Chemically Speaking" Newsletter is also available with a user-friendly search engine, including an archive of issues back to 1997.

Identifying Natural Enemies in Field Crops

Michigan State University has produced a new pocket-sized bulletin on beneficial insects. Authors Mary Gardiner, Christina DiFonzo, Michael Brewer and Takuji Noma developed a 46 page guide entitled Identifying Natural Enemies in Field Crops through partial funding by CSREES Risk Avoidance Mitigation Program. This guide is divided into sections by major groups of natural enemies and spiders: beetles, true bugs, lacewings, predatory flies, parasitoids, spiders and ants. This publication has beautifully detailed photographs, helpful descriptions, and can easily be used in the field with its plastic-coated 3.5" X 5.0" pages. Viewable sample pages can be found by visiting <http://ipm.msu.edu/pubs-natural.htm>. Although it is geared for field crops, it is appropriate for use in other crops and by homeowners. For more information contact the MSU Extension bulletin office, 517-353-6740.

PLANT SCIENCES STAFF DIRECTORY

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